

CLAIMS

1. A glass for laser processing that can be laser-processed by causing ablation or evaporation by laser beam energy absorbed therein,
5 wherein the glass for laser processing has a composition that satisfies the following conditions:
 $60 \leq \text{SiO}_2 + \text{B}_2\text{O}_3 \leq 79 \text{ mol\%};$
 $5 \leq \text{Al}_2\text{O}_3 + \text{TiO}_2 \leq 20 \text{ mol\%};$ and
 $5 \leq \text{Li}_2\text{O} + \text{Na}_2\text{O} + \text{K}_2\text{O} + \text{Rb}_2\text{O} + \text{Cs}_2\text{O} + \text{MgO} + \text{CaO} + \text{SrO} + \text{BaO} \leq$
10 $20 \text{ mol\%},$
where $5 \leq \text{TiO}_2 \leq 20 \text{ mol\%}.$
2. The glass for laser processing according to claim 1, wherein the composition satisfies the following condition:
15 $(\text{Al}_2\text{O}_3 + \text{TiO}_2) / (\text{Li}_2\text{O} + \text{Na}_2\text{O} + \text{K}_2\text{O} + \text{Rb}_2\text{O} + \text{Cs}_2\text{O} + \text{MgO} + \text{CaO} + \text{SrO} + \text{BaO}) \leq 0.9.$
3. The glass for laser processing according to claim 1, wherein the composition satisfies the following conditions:
20 $70 \leq \text{SiO}_2 + \text{B}_2\text{O}_3 \leq 79 \text{ mol\%};$
 $10 \leq \text{TiO}_2 \leq 15 \text{ mol\%};$ and
 $10 \leq \text{Na}_2\text{O} \leq 15 \text{ mol\%}.$
4. The glass for laser processing according to claim 1, wherein the glass
25 for laser processing comprises titanium in the form of at least one selected from an atom, colloid, and ion.
5. The glass for laser processing according to claim 1, wherein the glass
30 for laser processing has a thermal expansion coefficient of $100 \times 10^{-7} \text{ }^\circ\text{C}^{-1}$ or lower.
6. The glass for laser processing according to claim 1, wherein the glass for laser processing has processing threshold values of 60 mW or lower at a wavelength of 266 nm and 500 mW or lower at a wavelength of 355 nm,
35 where ultraviolet rays with the wavelengths of 266 nm and 355 nm of a Nd:YAG laser are used as laser beams, the laser has a frequency of 20 Hz and a pulse width of 5 to 8 ns, the laser beams are focused with a lens whose

focal length is 100 mm, and the processing threshold values denote energy used at the limit of causing ablation by irradiating the glass with the laser beams, and

5 the glass for laser processing has a thermal expansion coefficient of $100 \times 10^{-7} \text{C}^{-1}$ or lower.

7. The glass for laser processing according to claim 1, wherein the glass for laser processing is produced by a melting method.

10 8. The glass for laser processing according to claim 7, wherein the glass for laser processing further is polished.

9. The glass for laser processing according to claim 1, wherein the composition of the glass for laser processing is substantially uniform in a
15 direction of thickness of the glass.

10. The glass for laser processing according to claim 1, wherein the glass for laser processing can be subjected to processing of a vicinity of a surface thereof and processing of making a through hole.

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